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Happy and Prosperous New Year

Not in many a year have Florida citrus growers entered a New Year with as bright prospects for a profitable season as now seems assured for 1950. Since the opening of the shipping season fruit of all kinds has been moved at very satisfactory prices and the outlook for a continuation of profitable returns is most encouraging.

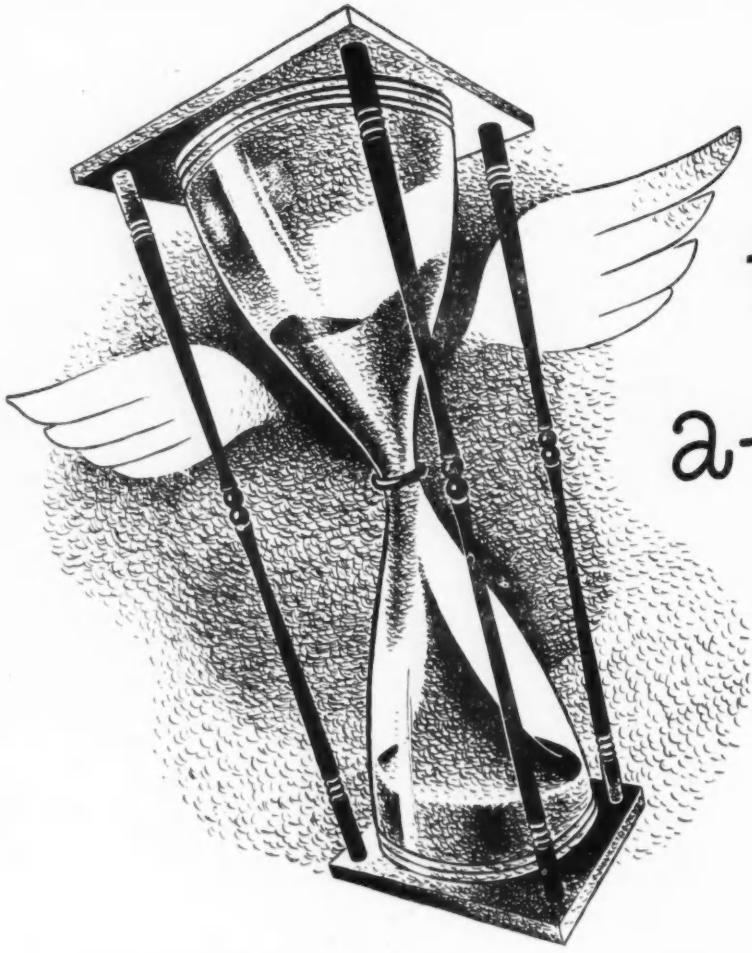
Varied and sometimes conflicting reasons have been assigned for this favorable condition: The new citrus code, with its higher maturity standards, the operations of Florida Citrus Mutual, the restrictions of the marketing agreement committees, and the excellent quality of the crop — all have been advanced as the primary reason for the profitable prices received. It is probable that each of these elements has been a contributing factor; in combination, they have operated to the advantage of the growers. Whatever the cause, the grower has been the beneficiary.

That the Florida citrus industry is in for a period of expansion and profitable operation is attested by the fact that "Big Money" is interested as never before. Purchases of large grove properties and expansion of canning and concentrate plants is evidence of this confidence by great financial and industrial interests.

Growers are entering the New Year with a degree of confidence which has been lacking in recent years. That such confidence is well founded, we sincerely believe.

The Citrus Industry wishes every citrus grower and every affiiliated interest a Happy and Prosperous New Year.

Vol. 31, No. 1 January, 1950



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State Plant Board Quarantine Activities . . .

ARTHUR C. BROWN, PLANT COMMISSIONER AT FLORIDA STATE HORTICULTURAL SOCIETY

I am happy to have the opportunity to talk to this assembly of growers about plant quarantine problems. I shall confine my remarks chiefly to a discussion of the blackfly situation in Mexico, the Oriental fruit fly situation in the Hawaiian Islands, and to a change in the manner of inspecting foreign baggage by Customs which is now being considered by the Secretary of the Treasury.

The spiny citrus whitefly, or blackfly, **(Aleurocanthus woglumi Ashby)**, is well established in Mexico and is moving northward towards the citrus plantings in Texas, Arizona, and California at a rapid rate. This insect was originally found in British India by Dr. R. S. Woglum, and it was named in his honor. In his opinion, this pest can more quickly reduce a citrus tree to a stage of unproductiveness than any other insect he has observed.

Blackfly was first reported from the Western Hemisphere when is was found in Jamaica about 1913. Since that time it has spread into Cuba, the West Indies, Panama, and Mexico. About twenty years ago, largely through the interest and efforts of the State Plant Board of Florida, our federal government sent collectors into India and Burma to search for natural enemies of this pest. Several parasites and predators were found and sent to Cuba and the Bahamas, where some of them became firmly established. One predator, **Eretmocerus serius Silv.**, has flourished in those islands, with the result that citrus blackfly is no longer regarded as a serious pest in those localities. Blackfly was found in Key West, Florida, in 1934. Eradication measures providing for the application of an oil spray to all host trees were started immediately, with the result that eradication was completed in 1937. The last live forms were found on February 27, 1937. It is not known to be preset anywhere in the United States.

Although blackfly was first reported from Mexico in 1935, nothing worth while was attempted in the way of control. Several private agricultural concerns brought in the predator from Cuba, but this insect was apparently unable to become established in the higher and drier atmospheric conditions encountered in Mexico. In 1947 citrus growers in Arizona and California awoke to the fact that blackfly was firmly established on the west coast of Mexico as far north as Empalme, a town located about 270 miles south of the Arizona line, and, unless its northward speed was checked, it would undoubtedly find its way across the border. These growers raised a fund of $25,000 and, after securing the permission of officals of the Mexican Government, sent Dr. Woglum, at that time Entomologist of the California Fruit Growers Exchange, together with a number of assistants and spray machines, into the Empalme area to attempt to bring blackfly under control. This work was continued until May 1948, when the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, with an appropriation of $100,000 provided by Congress, went into Mexico to undertake research investigations on the life history and methods of control of this insect and also to finance an expedition into India and Burma for the purpose of finding additional natuarl enemies that would flourish under Mexican conditions. A cooperative agreement was entered into between the Bureau officals and the Mexican Government and a plan of operation was adopted. The Mexican Government has promulgated quarantines as far back as 1947 for the purpose of preventing the movement of infested plant material from the areas in which blackfly was known to be present. Dr. A. C. Baker, In Charge of the Bureau's Division of Fruit Fly Investigations at Mexico City, was placed in charge of the Bureau's work. Mr. J. C. Cooper, an entomologist of the Bureau with considerable experience and training in control activities, was placed in charge of the field work.

Field headquarters were established at Empalme, in the State of Sonora on the west coast, and at Valles, State of San Luis Potosi, located about seventy-five miles southwest of Tampico. There are large commerical plantings of citrus trees in the Valles area. Participation by the Bureau was confined to research investigations, the search for natural enemies, and the development of effective control measures. No authority was provided for inspectional purposes to delimit the infested area or for actual field control activities. Special attention was paid to the training of employees of the Mexican Department of Agriculture in order that they might become proficient in the effective application of spray materials.

Under the terms of an appropriation in the sum of $190,000 passed by Congress for continuation of blackfly investigations during the current year, the Bureau will continue these activities and, in addition, make surveys for the purpose of delimiting the infested areas, cooperate with the Mexican Government in the enforcement of quarantines, and apply control measures at points where there is a risk of dissemination of blackfly northward towards the border.

(Continued on Page 7)

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Citrus Culture In South Africa

T. RALPH ROBINSON
TERRA CEIA, FLORIDA, AT
MEETING FLORIDA STATE
HORTICULTURAL SOCIETY

In discussing this topic with Florida citrus growers the first consideration is the water shortage common to the South African areas where citrus is grown. This means that their methods of culture more closely resemble those used in California than in Floridaa. Wherever possible dams are built to save all the water possible, water rights are parceled out to the growers, often not enough. So the growers put down "boreholes" or wells, to supplement their supply. On the higher portions of the grove property reservoirs are built to serve in irrigating by gravity. Usually one of these reservoirs serves as a swimming pool. In some places these pools cannot be used safely without treating the water with copper sulphate. A disease called Bilharzia carried by snails along the ditch banks acts much like hookworm, only worse. Africa has its insect problems, sme of them as the testse fly, very terrible.

Perhaps the obscure aphids or similar tiny insects that carry virus diseases from plant to plant may in time prove as dangerous to the economy of the ccuntry as others long recognized and being fought with all the tools of science. Dr. Von dePlanck, at the meeting of the South African Association for the Advancement of Science held at Kimberly in July, emphasized this point, pointing out the grave menace to orchard crops from insidious virus diseases in South Africa, but without going into detail.

First, I know you will want to know about "Tristeza," the virus that kills all ctirus trees (except lemon) budded on the Seville or sour orange rootstock. It is of no importance in South Africa. For many years they have used only immune rootstocks, chiefly the rough lemon. Recently, as in California, there has been a swing over to the sweet orange as a budding stock. Dr. Raimond Marloth, Superintendent of the Subtropical Research Station at Nelspruit has published several articles in which he has offered evidence that the sweet orange is preferable in many ways to the rough lemon and equally immune to "Tristeza," a Brazilian term that they don't as yet recognize. One reason is that groves on rough lemon rootstock seem to go into a "slow decline" from the 25th year on, somewhat similar apparently to the slow decline in Florida. In contrast, Dr. Marloth gives an instance of a sizeable grove over 25 years of age in the same area on the sweet orange rootstock still in vigorous bearing condition. Carefully checked experiments for over ten years with these and other stocks have confirmed the favorable opinion of the sweet orange rootstock. Trees are slower in coming into production but the quality of the fruit is superior.

But the fly in the ointment is this. Another virus disease has made its appearance in recent years for which there appears to be no immune rootstock nor any immune variety. Dr. Marloth reported about a year ago that all the tangelos and Temples except the Orlando were subject to this disease, called "greening." When I visited the test orchards with Dr. Marloth in June a few fruit of the Orlando were found showing traces of the insidioous disease. The serious part of the situation is that before it was realized that this menace existed many thousands of buds and budded trees of practically all their ctirus varieties had been distributed far and wide in South Africa. Growers as yet do not seem to realize that there is trouble ahead, many of their trees being as yet too young to give evidence of the new virus. The symtoms are this,—small green spots or a single spot appears near the stem end of the fruit, the fruit becomes deformed—smaller than normal in size, insipid in flavor, and inferior in keeping quality. While some of it can be sold locally, it is worthless for overseas shipment,—the market for the great bulk of the South African crop. While South Africa produces only 2 percent of the citrus fruit grown in the world, their shipping time comes when very little is available from other sources, so that they actually furnish about 50 per cent of the fruit introduced into European markets.

Besides "greening," there is a "gum pocket" disease also called by the pathologists "bark pitting," that seems

somewhat like a form of psorosis especially bad in central Florida on the Orlando tangelo. I visited twice the laboratories ("laboratries") of the Botanists and Pathologists at Pretoria and was shown both macroscopic and microscopic specimens of these diseases. Dr. Phillips, Dr. Dyer, Dr. Anderssen, Dr. McClean and Mr. Crous were all very cordial. Dr. McClean told me of a virus disease recently appearing in the lime groves of the Gold Coast that kills trees in less than a year. He has proved that it is transmitted by an aphis.

I took with me to South Africa, at Dr. Marloth's request, seed of our best tangelos (furnished by the Orlando laboratory and properly treated) — these seed to start new clones or races free from virus. It was, however, obvious that such a new virus-free race would not long remain in that condition unless their entomologists succeeded in discovering the agent of transmittal, — ahpis or whatnot, and succeeded in eradicating it, — quite a job.

Of course they have the Medfly, which doesn't seem to worry them. They use as a bait spray flousilicate and a sweetener (white sugar) — fruit kept picked up and buried. But a still worse pest is the so-called "false codling moth." While the Medfly attacks only ripe fruit, the moth attacks fruit in any stage of ripeness. It is not attracted to bait sprays nor to electric lights at night. Fruit is kept picked up and picked off and buried deep or immersed in tanks with oil and water. Still they go on planting, with all these handicaps.

One reason perhaps is the tight control maintained by the State through the Coop. Every grower having 300 citrus trees or more becomes a member automatically, and the Coop. disposes of his crop. In one large packing house the fruit was being stamped not only with the brand but with the retail price!—8 for a shilling or 10 for $, according to grade or size — this to prevent retailers from overcharging their customers!

It was the manager of this huge concern, the Crocodile River Estates, Mr. Esselyn, who pulled out a diary and told me that on December 20, 1920, he and his wife had been entertained at our Terra Ceia home, and he had visited the Manatee groves with me. Incidentally, nearly every man that I met connected with the citrus industry had been to America and knew most of our research men quite well.

The Crocodile River Estates has a well equipped research labortory, Dr. Kriel in charge, where all their problems are investigated with modern methods. They are quite familiar with the need sometimes of nutritional sprays and use zinc sulphate quite regularly. In a few instances iron has been found decidedly beneficial, and also boron. I was surprised to find that practically all their citrus soils are mildly acid, and lime is being used in many places, especially where it is desired to use legumes as cover crops. This is necessary with lucerne or alfalfa which serves the double purpoose of gathering nitrogen and deeply penetrating the soil with its extensive root system.

Besides citrus, the Crocodile River Estates grow avocados, mangos, papayas, lychees, guavas, and large quantities of vegetables. There are about 40,000 lychee trees in the Valley, all propagated from two Mauritisu seedlings introduced about 50 years ago. The largest of these two seedlings had a spread of about 60 feet and a height of 40 feet. They were anxious to learn of Col. Grove's improved method of air layering using Vitafilm. This company empolys about 1,000 natives and has about as many bullocks. A few of the latter are used as oxen but their main use is to feed their native workers. The latter get 2 shillings a day in cash (about 40c) plus their rations and quarters. It amounts to about L4 a month, or about 15 to 16 dollars. A modern hospital is provided for the sick and injured. A careful check is kept on calories and vitamins to make sure their human workers are in fit condition for their work. Beer brewed on the premises is doled out on Saturday night.

Some other orchard crops have been given a trial. Pecans have not proved promising. Tung oil groves (both **Aleurites Fordi** and **A. Montana**) have been a total failure.

Returning to citrus, the orange was brought into South Africa in 1644 from the Island of St. Helena. It was a surprise to find some old varieties such as "Mediterranean sweet" and "Du Roi," long ago abandoned in Florida, being grown in a small way. They give some trouble from splitting,—one reason for their being given up in Florida. The Valencia constitutes 55 per cent of the commercial plantings, 40 percent being navels, and 5% miscellaneous. Of all citrus, 85 percent are oranges, 12 percent grapefruit, 2 per cent lemons and 1 per cent "naartizes," or tangerines. Considering that their main market is overseas, 3,000 miles away (1,000 by rail), it perhaps is quite fortunate that their fruit has a thick, tough peel. The standard of sugar content, 6½% solids, is quite low according to our ideas. The use of arsenic on oranges is permitted but limited to a small percentage of the acreage not to exceed 10 percent. This is done to spread out the shipping season. Fruits given the arsenic spray must pass a test of 8½ per cent solids.

A bag of netting holding 30 lbs. of fruit is called a "pocket." Two and a third pockets are about equivalent to a packed case of 80 lbs. Their estimates on the crop are usually expressed in "pockets" even though the overseas fruit is packed in wooden cases much like the California crate. They expect to export 10 million poc-

Rustenburg Valley, typical mountain scenery close to the grove. Bowling green in the foreground. Grove planting hidden by tall jacaranda trees. The valley is hemmed in by such rocky mountains.

kets this year, equal to 3½ to 4 million packed cases. This is about 10% more than the previous year. In other seasons the Coop. has been able to sell the overseas crop at a fixed price in England, but under the present government such an arrangement did not prove possible. The head of the Coop., Dr. Winston Allright, went to England recently to try to arrange for the disposal of this year's crop. Dr. Allright happens to be a distant cousin of our own Mr. John R. Winston.

In the "pack houses" (packing-houses) I visited I looked over their crate material of "box shook." All of it was imported—from Brazil, U. S., Sweden, Portugal, and Spain. Many millions of Eucalyptus trees are being grown but they all go "underground," used as mine props. The wood is not suitable for crate making. My nephew, a Government Forester in Southern Rhodesia, is preparing soon to remedy this situation. He is growing, in several extensive Reserves which I visited, many thousands of pine seedlings,—species from our own southern states and one species from Mexico. No house in So. Africa is ever built of wood,—only brick or stone is used and seldom more than one story high. I photographed the only wooden house I saw in 5 month's travel, and it was a recently built **log house.** Things will be different, I believe, in another decade or two. My nephew, by the way, got much of his early horticultural training in Florida while visiting at Terra Ceia, enough to decide him to be a forester.

Nothing has been said about another citrus area of growing importance, the grove plantings of Southern Rhodesia. The best known and oldest grove is an extensive one known as The Premier Estates. The manager, Mr. Perrott, has grown up on the farm and has some original ideas. He showed me one block of trees that for 12 years had not been cultivated—trees in excellent condition and producing a good crop of fruit. When an old grove is removed he practices a "Sunn Hemp," 5 years in alfalfa, then rotation,—2 years in grass, 3 years in replant to citrus. He can carry out such a program as the farm embraces large areas devoted to maize, wheat, oats, and pasture for a large herd of cattle. This citrus area seems to be free from the virus disease, "greening." Much of their orange grove is planted to the "Premier orange," a Jaffa seedling resembling the Jaffa orange grown in Florida. It is a fine eating orange. The Mediterranean Sweet is also liked and still being planted. Most of their fruit can be sold locally or sent further north without resorting to the overseas market.

Another extensive citrus area that I planned to visit was that known as Sundays River, including the Amanzi Estates. This area is in the Cape Colony and benefits from its proximity to the Indian Ocean. On the Atlantic side in the same latitude, it is too cold for commercial citrus growing. An untimely illness prevented my visiting this interesting region. Those of you who have access to the South African Citrus Grower will learn a good deal about this region. The Grower is owned and edited by Mr. and Mrs. J. Mackie Niven, owners of the Amanzi Estates. The Nivens visited the citrus growing section of the United States about a year ago. Mrs. Niven is a daughter of Sir Percy Fitzpatrick, author of the famous book "Jock of the Bushvelt." On our way to the great game reserve, the Kruger National Park, we traveled along the road parallelling the Sabi river which marks the trek of Sir Percy. This road is now being properly marked by the State and preserved as a monument to the memory of a great pioneer.

The opportunity to see so much of South Africa and the citrus districts was made possible by my brother-in-law and genial host, Col. A. H. Guy, himself a citrus grower and a prominent industrialist and philanthropist. Though a very busy man he spent weeks taking us about and showing us points of interest. The visit to the Kruger National Park is a story in itself. His familiarity with the region made it possible for us to see and photograph more of the big game animals than less fortunate visitors see after weeks of repeated visits. Dr. Marloth told of an experiment that was started in a citrus grove not far from the game preserve. The experiment was rudely interrupted by an invasion of elaphants and hippos destroying some of the trees. No doubt the green foliage tasted good.

Everywhere we were received with the greateest courtesy and altogether it was a wonderful trip.

STATE PLANT BOARD QUARANTINE ACTIVITIES

(Continued from Page 3)

The blackfly situation in Mexico is not an encouraging one and, in my opinion, the prospect for preventing its entry into the United States is less encouraging. According to a report made by a representative of the Mexican Government, Senor Horacio Aburto, at a recent meeting of the Western Plant Board, the number of states in Mexico in which blackfly is present increased from 10 as of June 1948, to 17 as of June 1949; and the number of infested counties increased from 73 to 152 during the same period. At present there are possibly 2,000,000 citrus trees known to be infested with blackfly. This is one eighth of the 16,000,000 citrus trees reported as growing in Mexico. In this connection it should be stated that very little work has been done in Mexico for the purpose of discovering all the infested properties; and futhermore, that citrus is only one of some 150 species of plants reported as hosts of blackfly. At the present time this pest is established along the westcoast of Mexico from a point close to the southern border northward to Emplame, 270 miles south of the border. In recent months it has spread northward from the Valles area on the east coast of Mexico into Victoria and to Monterrey. Monterrey is only 130 miles by air from Brownsville, Texas.

It has been estimated that 400 spray units would be rquired to spray some 2,500,000 citrus trees growing in the known infested areas. We are informed at the present time that there are only 96 units available. The Mexican Government may be in a position financially to furnish all the spray units required, together with control materials, and a field force sufficient to operate the machines, make surveys, and to enforce quarantines at railway, motor vehicle, and airport terminals, as well as on the many roads leading out of the infested areas. If these funds are not forthcoming, or if adequate control and quarantine measures are not provided, there is nothing to keep blackfly from moving northward into the United States.

What is being done by the authorities to keep blackfly from crossing the border in commercial shipments of plants and plant products, motor vehicles, or in parcels and baggage carried by travelers? According to information at hand, inspectors of the Bureau are stationed at the principal ports of entry for rail and motor vehicles. All plant material that crosses the border in freight cars or motor vehicles is subject to examination or fumigation. Small lots of plants observed by inspectors in airplanes, motor vehicles, or in passengers' baggage are examined and if they are free from plant pests they are released; but if infestatioon is found they are either fumigated or destroyed. At ports on the Mexican border, as elsewhere in the United States, plant quarantine inspectors, who alone

have the right to stop shipments of commodities entering the United States are to open baggage for examination.

The second insect to be discussed is the Oriental fruit fly in the Hawaiian Islands. The fruitfly problem in Hawaii really includes three destructive fruitflies:

1. Melon Fly **(Dacus cucurbitae)**- introduced 1897.

2. Mediterranean Fruitfly **(Ceratitis capitata)** - discovered 1910.

3. Oriental Fruitfly **(Dacus dorsalis)** - introduced about 1944 or 1945, probably by American troops returning from Saipan. The entire group of Hawaiian Islands were found to be infested in less than two years after the introduction of this pest.

Although a recent introduction into the Hawaiian Islands, the Oriental friutfly has proved itself to be a major fruit pest, far exceeding in destructiveness the Mediterranean fruitfly which it has almost completely displaced in the common edible friuts produced in Honolulu and its vicinity. It attacks a greater variety of fruits and vegetables than the Mediterranean fly. (Med. fly — 72 hosts, Oriental fruitfly—104 hosts.)

Control Measures

Eradication was not undertaken because of the failure of the 3 year fight against the Mediterranean friutfly in Hawaii. So many host plants were inaccessible in deep ravines that eradication of Med. fly was not possible. This same condition would have existed on an even wider scale with the Oriental fruitfly since is was spread over all the islands soon after its introduction.

Several things are being done in the islands to control this pest to prevent its spread to the mainland. These include a world-wide search for parasites for biological control; chemical control experiments; and trapping.

Mr. Colin Lennox, President of the Board of Agriculture and Forestry, Territory of Hawaii, in a paper read before the Western Plant Board, June 1949, by Mr. C. E. Colley, United States Department of Agriculture, made the following statement with regard to biological control of fruitflies in Hawaii:

"Any permanent reduction in the fruitfly populations in Hawaii will be through means of biological control. This phase of the work has therefore been given the greatest attention to date. There are few natural enemies of the fruitflies in Hawaii at present and those which exist exert a minor control. The Melon fly is under control with the help of a Braconid wasp **(Opia fletcheri)**. The Mediterranean fruitfly is kept under fair control in thin-fleshed fruit by four wasp parasites **(Opius humilis, Diachasma tryoni, Diachasma fullawayi, and Tetrastichus giffardianus)**. None of these parasites exert any control over the Oriental fruitfly."

Entomologists searching for parasites of the Oriental fruitfly in the Federated Malay States for over a year have been sending weekly shipments of parasitized pupae to Hawaii. From this material three Braconid have been successfully reared in large numbers and liberated throughout the Territory. They are now being recovered in good numbers showing that they are well established. These parasites are **Opius longicaudatus, Opius persulcatus, and Opius incisi.** The material has also yielded three additional parasites which are still under study under quarantine conditions to determine whether or not they have secondary parasitism characteristics. The degree of control exerted by these new larval parasites on Oriental fruitfly is not definitely known at this time.

In addition to the entomologists in Malaya, there are also entomologists in South Africa and India looking for parasites of Oriental fruitfly.

To June 1949, 61,000 **Opius longicaudatus,** 8,000, **parsulcatus,** and 5,000 **O. incisi** had been liberated in Hawaii. All three are now well established there.

Chemical Control

Experiments are being conducted to evaluate a number of insecticides for use in the field and for use in aerosol mixtures to spray departing planes.

Mr. Lennox states that until such time as biological control agents are able to reduce fly populations to a negligible number there will be continuing need for protecting general agricultural areas where crops are reaching a stage of maturity where they may be seriously endangered by fly damage. This means the use of chemical agents, traps, and bait.

DDT has caused marked reductions in populations where it was used in shrubbery, weeds and brush areas adjacent to fruiting areas.

Traps are useful in checking fruitfly populations while insecticides are being tested, and in reducing fly populations around airports. As high as 2500 Oriental fruitflies have been taken in a single trap in a day. Most of the flies caught in these traps are males because no satisfactory lure has been found for the females. The males are attracted by oil of citronella.

Traps are operated on surface vessels to determine whether or not adult fruitflies gain entry to such vessels. None had been taken in these traps to June 1949.

Controls Set Up To Prevent Movement of Fruitflies From Infested Areas

Pre-treatment of commodities and quarantine are the principal means by which it is hoped the serious fruitflies of the Hawaiian Islands can be kept from reaching the United States. Much additional work needs to be done in the pre-treatment field to insure the safe movement of the maximum number of fruits, vegetables, and flowers.

All horticultural material and passengeer's baggage shipped from Hawaii to the mainland by airplane receives a pre-flight inspection. All fruitfly hosts found and not properly treated to meet quarantine requirements are rejected. All treating plants are under strict supervision of Federal or Territory inspectors.

All planes are given two aerosol sprayings before departing for the mainland—one before passengers are loaded and another after the passengers are aboard and just before the plane takes off. For the first treatment an agricultural spray too strong for use around humans is used.

The fruit flies are known to infest host material in Hawaii from sea level to elevations of 5,000 feet. There are some indications that at the cooler elevations ranging from four to five thousand feet the Mediterranean fruit fly dominates the Oriental fruit fly in the same host material, while at the low elevations the Oriental fruit fly dominates the Mediterranean fruit fly. We are told that at these lower levels the Oriental fruit fly, an aggressive insect, has practically driven the Mediterranean fruit fly out of infested areas. Studies were made during the past year on the capacity of the Oriental fruit fly to carry on its life cycle at high elevations, where temperatures drop to freezing and are comparable to the semitropical conditions of the United States. These studies are still in progress, and no conclusive information is available at this time.

The war against Oriental fruit fly is being waged by private and public agencies. The Hawaiian Sugar Planters Association, the Pineapple Institute, the Board of Agriculture and Forestry, the Agricultural Experiment Station of the Territorial Government, and the Bureau of Entomology and Plant Quarantine, United States Department of Agruculture are all contributing funds and personnel to the control and investigational program.

As is to be expected, residents of California are greatly disturbed by

reason of the presence of this fruit fly in the Hawaiian Islands and are concerned with respect to the possibility that it might be introduced into that state. Indicative of this feeling are several pieces of legislation enacted by the last Assembly:

S. B. 553 - To appropriate $34,800 to the State Department of Agriculture for Oriental and other fruit fly investigations, including trapping, surveys, quarantine, and studies in the treatment of host fruits. Provision is also made for sending to Hawaii to determine susceptibility to infestation fruits grown in California which are not to be found in Hawaiian Islands.

A. B. 1402 - To appropriate $100,000 to the Department of Agriculture for eradication of Oriental fruit fly in the event it makes its appearance in California and for indemnity payments for such crops as it may be necessary to destroy during the course of the eradication program.

A. B. 1403 - To appropriate $165,000 to the Regents of the University of California for research investigations in connection with the Oriental fruit fly.

In the event that Oriental fruit fly makes its appearance in any of the Pacific or Southern States, we may expect a wave of hysteria which will result in the imposition by uninfested states of quarantines of every kind and description, some of which may cause more financial loss to affected states than the fly itself. To forestall such action, the National Plant Board, at its recent meeting in Chicago, acted favorably upon the suggestion offered by a representative from California and supported by the writer to the effect that the Chief of the Bureau of Entomology and Plant Quarantine draw up for the consideration of state officials a model interstate quarantine which would provide a uniform and sensible measure for the protection of the several states.

The National Plant Board also requested the Chief of the Bureau of Entomology and Plant Quarantine to discuss with the Secretary of Agriculture and other appropriate governmental officials the need for the governments of Canada and Mexico and countries in Central and South America to promulgate and enforce quarantines governing the movement of untreated Oriental fruit fly host material into those countries from Hawaii. This action is necessary in order to prevent the establishment of this pest in these countries and its subsequent movement into the United States.

By reason of the movement into Miami of large numbers of aircraft each year, there is a real risk of entry

HAVE AN ORANGE, or a grapefruit, every day—That's the advice Mrs. Thelma Flanagan is giving Florida school children as a part of the annual Florida State Chamber of Commerce "eat-more-citrus - at - home" campaign. Mrs. Flanagan, as head of the state school lunch program, is one of many Florida leaders participating in the drive, which has full cooperation of the Florida Citrus Commission, educational, business and service organizations.

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of destructive fruitflies. During the past year, inspectors of the State Plant Board carried on a trapping survey in the Dade County area, and in addition examined thousands of soft-bodied fruits. A total of 112 man-days was devoted to trapping activities and 600 man-days were devoted to examination of fruits within a radius of thirty miles of Miami. No new or injurious insects were collected or observed during the course of these two surveys.

Inspection of Foreign Baggage by Customs

I now come to the third and last matter for discussion, namely, a proposed change in the manner of inspection of baggage brought in by passengers from abroad, a change which, if adopted by officials of the United States Bureau of Customs, will open wide the doors for the unsupervised entry of pest-ridden plant material from all over the world. I use the words "all over the world" advisedly, for plant material from 95 foreign countries and possessions was intercepted by our inspectors last year came in on airplanes.

As you know, it is the duty of inspectors of the Bureau of Customs, among other things, to open all baggage except that owned by individuals who travel under a diplomatic visa for examination to determine whether or not dutiable or prohibited commodities are present and, when such are found, to take appropriate action. Foreign plant quarantine inspectors, on the other hand, do not possess these broad powers and in the enforcement of foreign plant quarantines, must therefore, work in close cooperation and harmony with Customs inspectors. Quarantine inspectors "stand by" in the examination room ready to take charge of such plant material as may be observed by the Customs inspectors.

In recent years Customs has been under fire from certain quarters and has been charged with unnecessarily delaying the movement of airplane passengers through ports of entry by reason of the need for compliance with a number of Customs regulations. Several years ago, President Truman provided for the establishment of an Air Coordinating Committee, a subcommitte of which is the Committee on the Facilitation of International Air Travel. Representatives of Customs, Immigration, Public Health, the Departments of State, Commerce, and Agriculture, and representatives of the aviation industry sit on this Committee and discuss ways to adapt our clearance procedures to the needs for air transportation. This Committee has been very active in its attempts to bring about changes in the procedures of Customs, Immigration, and Public Health for the purpose of facilitating the movement of passengers through ports of entry in the United States. It must be admitted that some of these procedures are outmoded or cause duplication of effort, and should be revised or abolished. At the same time, it is the responsibility of every grower in the United States to keep close watch on the activities of this sub-committee so as to forestall any endeavor which might result in weakening our defense against entry of pest-ridden plant material from abroad.

More recently attention has been directed to Customs procedures from another quarter. About two years ago the Secretary of the Treasury of the United States employed McKinsey & Company, a commercial management survey organization, to make a study of the operations of the Bureau of Customs and to make recommendations which would improve the service performed by Customs personnel and

(Continued on Page 12

Plant Quarantine Enforcement From A Customs Viewpoint

A. C. WATSON, JR.,
ASSISTANT CUSTOMS COLLECTOR
DISTRICT NO. 18, AT MEETING
FLORIDA STATE HORTICULTURAL SOCIETY

(Concluded from last issue)

During a recent examination at Miami a Jamacian negress presented an incomplete baggage declaration. Her luggage consisted of 15 or 20 suitcases, boxes, bags and paper packages; also she carried three coats on her arm. The passenger declared a small quantity of liquor, some food stuff and miscellaneous inexpensive articles which she claimed were intended as gifts to relatives in New York. As she appeared to be ignorant, inexperienced and somewhat simple, the Customs inspector endeavored to assist her by giving full instructions. Believing she had not intended to violate the law, he premitted the amendment of her declaration to cover excess liquor and food stuffs. Examination disclosed the presence of some mangoes or prohibited plant material in each of the packages, which material was, of course, confiscated. After the completion of the examination and as the passenger approached the exit, she caught up a coat from an adjacent bench. The port patrol officer on duty at the exit noticed this movement, searched the coat, and six mangoes were found tied in the sleeves.

A similar incident occurred with an American citizen. After their baggage had been examined, a man and his wife, well dressed and carefully groomed, approached the exit. The port patrol officer on duty noted that the sleeves of the woman's coat which she carried on her arm had been carefully fastened with string. Believing that some contraband was contained therein and noticing a slight movement in the sleeves, the officer cut the strings and to his surprize some ten or twelve love birds escaped into the baggage examination room. The husband, whether aware of his wife's transgressions or not, gave her a cold look and departed from the room leaving her alone with the Customs officers. Little did she know that after the birds had been caught, she only had the option of exporting or destroying them. She chose the latter. Some tropical nursery stock was also found in the lining of the coat.

Another interesting case involved a small box in the possession of a member of the crew of an airplane. The examination was taking place upon the field as a contract plane was involved and no passengers were landing. Opening a small cardboard box approximately eighteen inches in height, the Customs officer thrust in his hand to discover the nature of the contents. He hastily withdrew his hand when he touched a small boa constrictor which was being brought in from Brazil by the crew member as a pet!

At Key West, Customs inspectors discovered a double handful of citrus leaves rolled in a pair of socks and stuffed into a shoe at the bottom of a barracks bag. These leaves were alive with egg spirals of **Aleuhocanthus woglumi Ashby** (citrus blackfly). Another passenger on the same day had spread a layer of lime leaves between two pieces of clothing in a trunk. Only a through inspection could have revealed the presence of this plant material.

The necessity for careful examination of all baggage is further evidenced by a seizure made by a Customs Officer at Miami recently. Noticing a bulge in the passenger's coat pocket, the officer asked that the contents be displayed. Among the papers and miscellaneous articles usually found in a man's pocket was a single citrus leaf. This leaf contained an egg spiral of the blackfly. Quarantine officers claimed but for the throughness of the examination the blackfly might have been introduced into the port of Miami.

The magnitude of the operation so far as the baggage examination is concerned is best evidenced by the following statistics:

During the fiscal year of 1948-49, Customs and Plant Quarantine inspectors in Florida boarded and searched approximately 20,000 airplanes from 95 countries, carrying 299,194 passengers with 740,627 pieces of baggage. Plant material from 89 countries were intercepted. The number of interceptions aggregated 7,769 or a total of 40,577 units.

The material intercepted consisted principally of tropical and subtropical fruits such as citrus, mangoes, guavas, Surinam cherries, sapodillas, custard apples and other hosts of fruit flies; crotons, hibiscus, oleander, gardenia, etc.; and staples such as corn, cotton, rice, sweet potatoes, peas and beans. the most important insects or diseases noted by the quarantine inspectors were fruit flies, including Mediterranean fruit and citrus blackfly, sweet orange scab, lima bean pod borer, California red and many other scale insects.

In addition to the air traffic, these officers boarded and searched 4,398 surface craft bringing in an aggregate of 33,528 passengers. The sea stores of each of these vessels were examined and the craft searched for contraband of all kinds.

During the same period approximately 55,000 mail packages and over 100,000 packages of merchandise were examined.

It has been practical for the quarantine officials to handle this vast volume of business because of the close cooperation which has existed between the two services.

In addition to the duties heretofore outlined, the presence of customs and quarantine inspectors is required to enforce quarantines in connection with arrivals of military and naval aircraft at MacDill Field (Tampa), Boca Chica Field (Key West) and the Municipal Airport (Jacksonville). It is not sufficient that the law be explained and orders issued by competent authority against the importation of plants and similar material into the United States without a permit. Actual examination of the plane and

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Tampa, Florida

the presence of officers alone will ensure this point. During the war some difficulty had been experienced at one of the army airfields in securing notices of arrival of planes from foreign ports. A conference was held by army, customs and plant quarantine officers. The commanding officer of the airfield, being sympathetic to the enforcement, issued strict orders against the placing of any fruit, vegetables or nursery stock on aircraft of the armed forces, including the Transport Service. He was confident that this would rectify the situation. However, on the next arrival of the plane which brought this commanding officer back to the United States, citrus fruit containing fruit fly larvae was discovered in the stores of said plane.

The statement has been made that the advent of air transportation has greatly increased the danger of the introduction of plant pests and diseases into this country. To refute this statement it has been pointed cut by the airlines that the inside of the plane is sprayed by the Public Health Service immediately upon the discharge of the passengers after arrival in the United States. The Public Health Service at Miami, however, has discovered clusters of moth eggs attached to the outside of the wings, fuselage and propellers of planes arriving at that port. Investigation discloses that in most cases these planes have remained on a field for a material length of time without operating, say for two to ten days. Approximately one million eggs have been accounted for to date. They consist of three different species of the moth family known as **Phalaenide.** One hundred egg clusters were found attached to the outside of the wings of an army plane arriving from the Dominican Republic. These clusters actually hatched while United States Public Health Service inspectors were watching and thousands of caterpillars dropped down on the grass beneath the plane. These were the larvae of the fall army worm.

The infiltration of moth eggs is of great interest as it offers a new means of transporting insects into the United States. It has been noted that the eggs are not laid on the wings where motor oil streaks appear. The problem might be solved by spraying the surface of aircraft with a light film of oil if such is practical.

It seems next to impossible to educate the traveling public and certain transportation officials to the fact that insects, plant pests and diseases dangerous to our agriculture and horticulture may be introduced through

. . . for the needs of your next crop

The time to plan for better fruit is long before a crop is made. This year's harvest will soon be history, so far as your trees are concerned — but the care your grove receives in preparation for the next crop will make a difference in the quantity and QUALITY of fruit you pick a year from now. DEPEND ON GULF . . . and your local GULF Field Man . . . for a planned program of grove care designed to produce good fruit at economical cost.

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RIGHT for YOUR Soils

RIGHT for YOUR Crops

The GULF FERTILIZER COMPANY

Tampa and Port Everglades, Florida

the importation of small quantities of nursery stock and fresh fruits brought in for personal use. The city dweller knows little of the problems of the farmer or the horticulturist and does not understand that the ornamental shrub or luscious fruit contained in his baggage may be the avenue of introducing a pest into the United States which will cost millions of dollars to eradicate or even control.

As eternal vigilance is the price of liberty, so alertness, careful inspection and rigid enforcement are the safeguards to the protection of our agricultural interests. We have, however, gone far since 1912. Today agricultural societies have been organized, the farmer has been educated and practically each state has an agriculture department and agents to assist the agriculturist. However, much more must be accomplished. Whether we like it or not we are living in one world. The means of transportation are such as to insure the rapid spread of diseases and pests from one locality to another. A partial solution, in the opinion of many informed persons, is that we must treat plant diseases as we would human dieases. When an outbreak occurs in Brazil or in South Africa, trained representatives of the nations having commerce with such countries must give aid and assistance by the contribuution of money and knowledge to the infested countries. This is not idealism or altruism; it is selfish, hard common sense.

STATE PLANT BOARD QUARANTINE ACTIVITIES

(Continued from Page 9)

at the same time reduce costs of operation. The Secretary is now studying this report, together with its recommendations. One recommendation that should be a matter of concern to all of us is that Customs discontinue the present procedure of examining all the baggage brought in by airplane passengers from abroad, a procedure which requires the services of a large number of Customs inspectors, and to inaugurate a system wherein only a small percentage of such baggage would be examined. This latter procedure would enable Customs to operate with a much smaller force of inspectors, thereby effecting economies in operations, and at the same time improving the service of speeding up the movement of passengers through the Customs inspections rooms.

It has been recommended that this type of ispection could be accomplished in one of two ways: (1) by examining a certain percentage of all baggage arriving; or, (2) by examining the entire baggage of a certain percentage of the passengers arriving. the percentage to be determined according to the conditions, information which may be received or from the declarations showing the purchases abroad.

Let us consider the effect such a system of percentage inspection would have on the enforcement of plant quarantines. It is a matter of fact and record that many travelers return to this country with plants, fruits, cuttings, and seeds in their baggage, and that this material is affected with foreign insects and diseases. At Florida ports last year quarantine inspectors removed 40,577 units of plant material from the 833,710 pieces of baggage brought into the State by 324,467 passengers. Live specimens of Mediterranean and other fruit fly larvae, citrus blackfly larvae and pupae, scale-insects, lima bean pod borer, sweet orange scab, and other pests not known to be present in the United States, were intercepted on a number of occasions.

(Continued on Page 16)

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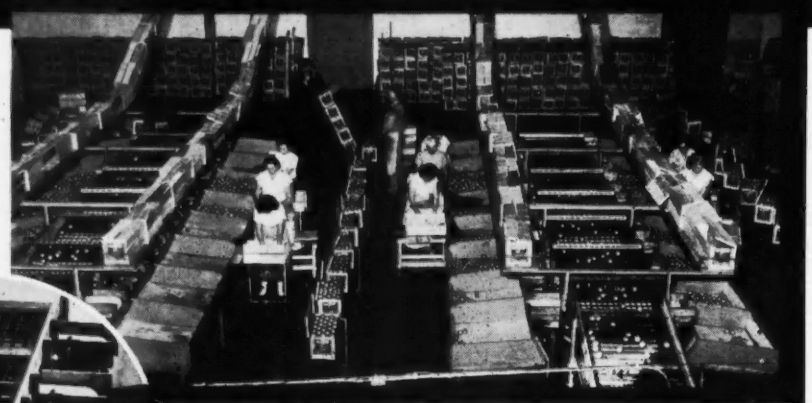

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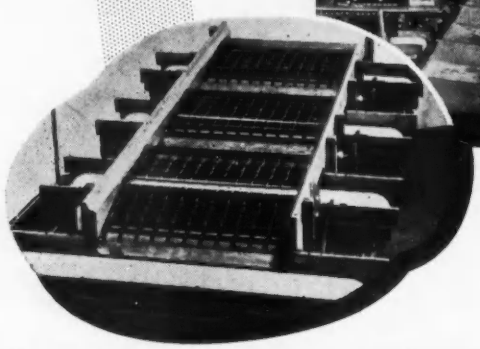

Closeup shows how tangerines are gently sized through wire mesh.

Yes, the new FMC Tangerine Sizer employs a revolutionary principle which virtually eliminates internal bruising and speeds up tangerine sizing operations! Losses are cut to a minimum and profits go up for progressive packing house operators who install this new equipment — another FMC first!

Available for separation of as many sizes as required.

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FLORIDA DIVISION . . . . . LAKELAND, FLORIDA

An Old Habit Well Worth Continuing

Many of the citrus belt's most successful growers have for many years been producing outstandingly large crops of the finest quality oranges, grapefruit and tangerines through the effective use of Florida Favorite Fertilizers . . . . and this habit of successful production certainly is one well worth hanging on to . . . . and incidentally, it's a habit which those who have not had the effectiveness of our fertilizers demonstrated to them, should investigate.

Grower customer after grower customer of ours brag about the large yields they get year after year . . . . indeed many of them assert that no yields they know of can compare with the crop production they attain after years of Florida Favorite Fertilizer treatment of their groves.

As one good customer of ours has said: "During any normal fluctuation in the price of citrus I am able to sleep comfortably at nights, because I know that my per box production costs are sufficiently low to insure me a substantial profit at any reasonable sale price."

Another thing which for years has proved valuable to our customers is the fact that we deliver our fertilizer to the purchaser in our own fleet of trucks when and where the buyer wants it.

Naturally, too, our staff of Field Service Men are unusually well qualified . . . . and their recommendations to citrus growers each season prove most effective in securing for them the maximum production.

You can't lost by investigating

Florida Favorite

FERTILIZER, INC.

Old Tampa Road Lakeland, Florida

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The LYONIZER

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Reports Of Our Field Men . . .

POLK COUNTY
J. M. (Jim) Sample

At this writing we are in the midst of a very severe dry spell and growers all over the county are busy with their irrigating systems. While we have had no serious damage from the drought it is apparent that we will have considerable fruit droppage unless rain comes at an early date. Our fall application of fertilizer has been applied and as usual contained ample amounts of secondary plant foods. Some properties are beginning to show deficiencies in magnesium and some of the other lesser elements, but this can be remedied with immediate application of proper materials. Fruit has been moving at a very rapid rate and as we cover the territory it is evident that a large number of groves have had their crops moved. This is particularly true in the case of oranges, with grapefruit having been moved to a lesser degree because of late bloom. Prices as a whole have been satisfactory and there is a general feeling of optimism that this profitable marketing situation will be continued throughout the season.

WEST FLORIDA
Eaves Allison

The frosty nights and cold days which have delayed maturity of the vegetable and flower crops have had the opposite effect on the citrus crop of the state. Fruit on the trees has assuumed a deep, strong color since the last writing of this column and has advanced a long way in maturity. The old saying that it is an ill wind that blows no one any good is well illustrated in this instance. With the coming of warm nights as well as warm days at this time, latter part of December, the big tomato and the other fall vegetables in this area will have a chance to mature the fine crop of fruit that has been hanging on the vines so long during the unseasonably early cold spell. Vegetable growers and gladioli growers can now begin to breathe easy again as volume in both operations start on the upswing. As for the citrus grower at this writing, he is still waiting for something to happen albeit more enthusiastically than at some other times in the not-too-long past.

SOUTH POLK, HIGHLANDS AND HARDEE COUNTIES
R. L. (Bob) Padgett

Citrus growers are optimistic over their price prospects for the remainder of the season, and certainly they have no grumble over what they have received thus far this marketing season. Oranges have been moving at a very rapid rate with grapefruit at a somewhat slower pace due to late bloom. Tangerines have also been very slow in moving, with sizes small and hard to get to pass maturity tests. Purple mite and red spider have been very prevalent during the past few weeks and much dusting has been done in order to bring these pests under control. Our fall fertilizer application has been completed and the poundage applied was ample to maintain a strong, vigorous condition of trees There is quite a bit of activity being shown by real estate operators but they are finding few properties to offer for sale The vegetable deal in Hardee County and at Lake Istokpoga looks very encouraging. There is a wide variety of vegetable crops planted and they are growing off in excellent condition and should bring the grower a nice profit.

NORTH CENTRAL FLORIDA
V. E. (Val) Bourland

We still have some early fruit to be moved from our trees in this section but most of it has been sold, and we are glad to report, sold at very attractive prices. There is a lot of activity among the fruit buyers at this time and they are making a strong play for midseason fruit and in many instances are bidding for the valencia crop. From where we sit at the present time it appears that we are going to have a good deal for the balance of this shipping season. Grapefruit has not been moving as rapidly as oranges but here too the market has been active, and we believe to a greater extent than the orange market. Our fall fertilizer application is well under way and those growers that have not already fertilized will come in with a good topdresser shortly after the first of the year. Vegetable crops in the Winter Garden area are in excellent shape and considerable spring planting will soon get under way and prospects are very bright for a profitable spring season.

WEST CENTRAL FLORIDA
E. A. (Mac) McCartney

Those growers with early varieties of fruit have been about thirty days late getting their groves worked out for the winter due to the higher maturity standards, but at this time we have everything in good shape, with the fertilizer having been applied and all groves thoroughly cultivated. It is getting dry and wherever possible irrigation is being done. There is some droppage of fruit but not as severe as we have seen on many occasions. Growers are in a good frame of mind — they have been getting good prices for their fruit throughout the season. Weather conditions, with the exception of moisture have been in our favor — we have had enough cold weather to color our fruit and it is really of excellent quality at this time. We have had some damage from red spider but we are doing all possible to keep this pest under cntrol.

HILLSBOROUGH & PINELLAS COUNTIES
C. S. (Charlie) Little

This section of the state has the finest quality fruit that we have seen produced in a number of years. We have talked with growers and they tell us of trips through other producing areas, and it seems to be the general concensus of opinion that we really have the best to be found in Florida. Oranges have been moving at a very rapid clip but movement of grapefruit has been slow. Prices have been good on all varieties and it appears that they will continue strong throughout the season. All in all it looks as if we are going to have a very successful and profitable season. As of this writing, the latter part of December, we are beginning to experience some dry weather, but of this date little irrigating has been started. Rust mite and red spider are prevalent throughout the territory and growers are making a concerted effort to keep these pests under control. We have noticed over a period of years that newly picked groves are very susceptible to the ravages of red spider when we have severe dry weather. In other words a good rain at this time would be very beneficial.

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USE LYONS---

It's the Sign of Progress

The Lyons Fertilizer Company has never been in such a position that it was satisfied to say "What was good enough for my grandfather is good enough for me." On the contrary the executive force of the Lyons Fertilizer Company has always been on the alert for new and constructive ideas for the improvement of Florida Agriculture.

Special attention is always given to any new development that is presented to the Florida growers. There have been many of these new and radical ideas presented in the past 25 years and by selecting the good and discarding the bad, Lyons has made progress for the grower.

New ideas in cultural practices are always screened, weighed and considered from all angles. Of most concern to Lyons is: Will this practice be profitable for our customers? Is it a satisfactory practice from an economy standpoint? Will it produce quality fruit? Is it practical?

If the new idea meets these and other tests, it is then adopted as a Lyons program. Many so-called new and progressive Programs of culture have failed and caused harm. Others have been successful. Some although developed over 50 years ago, are still in use today.

Consult your closest Lyons Field Man. He is well qualified to discuss your problems with you.

Most of all—Use Lyons Fertilizers—It's the sign of progress.

LYONS FERTILIZER COMPANY

P. O. Box 310 **Tampa, Florida**

STATE PLANT BOARD QUARANTINE ACTIVITIES

(Continued from Page 12)

If the powers that be decree that Customs shall examine only a certain percentage of incoming foreign baggage—and the figure of 10% has been mentioned informally—it is a foregone conclusion that the plant quarantine inspectors will not be permitted to examine the other 90% that Customs will pass without scrutiny. This would mean that each year many thusands of parcels of plants or plant products, a considerable portion of which will unquestionably be affected with plant pests — some of major economic importance — will have free and uninterrupted entry into Florida and elsewhere in the United States.

In making this particular recommendatin, McKinsey & Company no doubt considered Customs solely as revenue-collection agency, and overlooked the fact that Customs is also responsible for the prevention of entry of dangerous viruses, unauthorized serums and toxins for treatment of man and animals, immoral pictures and articles, drugs, and narcotics, as well as agricultural products.

The authors also overlooked the fact that the savings that would be made through percentage inspections would be infinitesimal when compared to the expenditures from private, state, and federal sources that would be necessary to control or eradicate such major plant pests as will undoubtedly be brought into this country in plant material carried in baggage that would be passed without examination under the percentage system.

Your Plant Commissioner has participated in several conferences with officials of Customs and the Department of Agriculture, in which he sought further information on the subject of percentage inspection. He left these conferences with the convictions (1) that these officials are opposed to the proposal and (2) that they were under orders not to talk too much. Members of the State Plant Board and the Plant Commissioner and his associates believe that this proposal is of sufficient importance to justify wide dissemination of the proposed change and the arousing of public interest to the end that responsible officials in Washington be advised that the adoption of a percentage system of baggage inspection would bring about a breakdown of our defense against entry of injurious plant pests from abroad, a condition that cannot be allowed to develop.

The State Plant Board has passed a resolution voicing a protest to the percentage system of baggage inspection and copies have been sent to President Truman, the Secretaries of the Treasury and Agriculture, and members of Florida's Congressional delegation, and to growers and growers organizations. As a result of the interest aroused by the Plant Commissioner, the National Association of Commissioners, Directors, and Secretaries of Agriculture adopted a resolution similar in wording and distribution. Resolutions of a like nature were adopted by the members of the Southern and National Plant Boards. Growers and representatives of growers' organizations have been informed of this matter. The members of the Florida State Horticultural Society should give serious consideration to the percentage inspection proposed and take appropriate action to forestall its adoption.

Thank you.

"UNCLE JEFF" PASSES

S. J. "Uncle Jeff" Sligh, one of the veterans and pioneers of the citrus industry in Florida, has passed to his reward. "Uncle Jeff" was known, and favorably, to almost every citrus grower of the state. His passing takes from the Florida citrus picture one of its most picturesque and lovable characters.

Are You Ready for 1950?
With the ending of 1949, growers can look back on a year of prosperity for most Florida Agriculture. 1950 is still a question — But, CAREFUL growers of all crops can look forward to continued prosperity.
NACO Fertilizer and Services can and will be an important factor in planning your prosperity for the year ahead.
Call on us to do our part —
NACO 5 STAR SPECIAL
ZINC IRON MANGANESE MAGNESIUM COPPER plus BORAX
NACO Fertilizer Company
JACKSONVILLE 1, FLORIDA

S. R. NEWELL WILL HEAD CROP REPORTING BOARD

Appointment of S R. Newell to become chairman of the Crop Reporting Board and assistant chief of the Bureau of Agricultural Economics, effective January 3, was announced recently by Secretary of Agriculture Charles F. Brannan. In his new position, Newell will have charge of all agricultural or crop and livestock estimating sections of the B. A. E., including the 41 State statistician's offices, many of whom work in cooperation with the State Departments of Agriculture.

Newell will succeed W. F. Callander, who will retire December 31 after 45 years of Government service.

JOIN UNIVERSITY OF FLORIDA

W. F. Callander, chairman of the United States Crop Reporting Board for nearly a quarter century and one of the country's best known agricultural statisticians, will retire December 31, Secretary of Agriculture Charles F. Brannan announced today. Upon his retirement, he will become visiting lecturer in applied statistics at the College of Agriculture, University of Florida, Gainesville, Fla.

Callander, reared on a Canadian dairy farm, rose from clerk to chairman of the Crop Reporting Board and assistant chief of the Bureau of Agricultural Economics in his 45 years of Government service.

MRS. KENDALL NAMED HOME INDUSTRIES AND MARKETING SPECIALIST

Mrs. Gladys Kendall has begun work as specialist in home industries and marketing with the Agricultural Extension Service, according to an announcement by Miss Mary E. Keown, state home demonstration agent.

Working with farm families through arrangements by county home demonstration agents, Mrs. Kendall expects to expand work on the use of Florida's products, especially citrus and vegetables, among consumers of the state.

Miss Keown says also, "We believe we can encourage home industries which will utilize some of the native resources of Florida to advantage."

Mrs. Kendall has been home demonstration agent in Volusia County and leaves her post as agent in Pinellas to accept the new work.

TRUCK AND CITRUS CROPS

need water-soluble magnesia for healthy growth, profitable yields

To get the greatest profit from every acre of truck and citrus crops, many growers are now using large amounts of fertilizer containing water-soluble magnesia.

They have found that better results can be obtained by adding magnesia to get a proper balance of plant foods rather than by using larger quantities of nitrogen, phosphate and potash alone. It also replenishes the magnesia which is rapidly lost by heavy cropping and leaching on light, sandy soils.

Symptoms of magnesia deficiency can frequently be seen in vegetables in many areas. Where extreme magnesia deficiency occurs, the green color of the lower plant leaves except for the veins fades to yellow or white before maturity.

One of the most practical and economical ways to supply quick-acting soluble magnesia is with *Sul-Po-Mag*, a natural combination of water-soluble magnesia and sulfate of potash. It is recommended for cucumbers, snapbeans, okra, cabbage, celery, white and sweet potatoes, watermelons, other truck crops and citrus.

Leading manufacturers are including *Sul-Po-Mag* in their fertilizer mixtures. The proper amount of *Sul-Po-Mag* will vary according to the needs of your soil. Many growers are using vegetable fertilizers containing 2 to 4% water-soluble magnesia from *Sul-Po-Mag*. For citrus, one unit of magnesia to each unit of nitrogen in the fertilizer is recommended.

For healthier growth, larger yields and added profits from truck and citrus crops, ask your dealer for fertilizer containing *Sul-Po-Mag*.

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GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

Citrus Insects For . . . January 1950

J. T. GRIFFITHS AND
W. L. THOMPSON

During November and December considerable injury from purple mites has been experienced throughout the citrus area. Since the 15th of December numerous reports have come in concerning purple mite injury and leaf drop has been severe in many instances. Dry weather is an important factor and in a few scattered grapefruit groves mesophyll collapse has occurred where no mites were present. In some cases mesophyll collapse has been attributable to rust mite injury rather than purple mites, but in most cases careful examination of the defoliated twigs has indicated that purple mites were present in considerable abundance. The cool nights experienced during November and December coupled with warm days and dry weather have been most favorable for the development of purple mites. It is to be expected that they will be a serious problem during January and February of 1950. Therefore, the sprays to be applied in January will be of importance for the prevention of purple mite injury.

The standard spray mixtures will include 50 pounds of wettable sulfur, 15 pounds of zinc sulfate, 5 pounds of lime, and 3 1/3 pounds of DN (40 percent dinitro-ortho-cylohexyl phenol) per 500 gallon tank. This spray is designed to accomplish several purposes. Zinc will be applied at a time to be available for the production of spring growth. Wettable sulfur is included for the control of rust mites. It should be remembered that rust mite injury at this time of the year very regularly results in "greasy spot" and subsequent premature leaf drop later in the year. Sulfur at this time is also important in preventing rust mite injury to fruit during the interval between bloom and the application of the post-bloom spray. Sulfur in January also may eliminate the necessity for a sulfur application in late May or early June.

DN is included for the control of purple mites. Even if only a few mites are present, it is desirable that DN be used in the spray. A few mites in early January may result in many mites by February, and, thus, failure to use DN may result in severe injury about the time that growth starts. As the old adage goes, "An ounce of prevention is worth a pound of cure," and this is certainly true in the case of using DN before purple mite injury occurs.

A 1% DN in sulfur dust may be used. However, past experience has indicated that dusts are not as satisfactory as sprays for the control of purple mites. This is due to several reasons. In a dust application only 0.1 lb. of DN is applied for each pound of sulfur whereas 0.26 lb. of DN is applied per pound of sulfur in a spray. This discrepancy is further increased by the fact that less material is applied per tree with a dust than with a spray machine. Thus, in two ways the amount of DN is decreased over that used in sprays and in addition generally poorer coverage is obtained with dust than with spray equipment. If dusters are to be used, extreme care should be taken to obtain adequate coverage. It is absolutely essential that both sides of the tree be dusted and that a considerable amount of dust be blown into the tops of the trees. Purple mites are particularly common in tree tops and it is essential that coverage be obtained in the upper branches. If purple mite infestations are at all heavy, it is recommended that sprays be applied.

For more detailed information consult the University of Florida Citrus Experiment Station at Lake Alfred or Ft. Pierce.

CITRUS HOLDS SPOTLIGHT IN AGRICULTURE IN LAKE COUNTY NOW, AGENT SAYS

Citrus is the top feature on the agricultural scene in Lake County now, according to County Agent R. E. Norris.

The recent cool weather resulted in marked improvement in fruit color and internal quality, and the harvest is moving steadily forward.

Sixty Lake County growers attended the annual tour of the Citrus Experiment Station at Lake Alfred recently to learn more about citrus production, fertilization, pest control, and other such matters. From the standpoint of interest and discussion among those attending, the tour was the best since this annual event was established several years ago.

Citrus molasses and pulp are being fed to many beef cattle in the county this winter, the agent also reported.

More than 200 acres of white Dutch clover have been planted this season by Washington County farmers, County Agent H. O. Harrison reports.

There are 470,000 times-lost farm work accidents in the United States annually.

Classified Ads

CITRUS TREE BARGAINS — A few thousand large Parson Brown, Hamlin and Jaffa orange and Duncan grapefruit trees on rough lemon root, 70c f.o.b. our nursery. All other commercial varieties on rough lemon and sour orange root from 75c to $1.10. Write for free "Tips For Growers." WARD'S NURSERY, Avon Park, Florida.

RETIRING CITRUS GROWER — in the heart of the famous Indian River section offers for sale his entire grove and home property, consisting of 50 acres of oranges and grapefruit, 15 years and older; 8-room, 2-story CBS furnished modern house; other buildings including large barn with all grove equipment including tractors, trucks, etc., also sundry tools—everything for $85,000. For particulars contact owner, ALFRED WARREN, Route 1, Box 212, Vero Beach, Florida, Phone 4662.

CITRUS TREES — Standard Commercial Varieties and Rootstocks. Information, Recommendations and Prices Furnished Upon Request. Clay Hill Nurseries Co., Box 2880, Tampa, Florida.

CLEOPATRA MANDARIN Seed and Seedlings, also contracting for budded trees on Cleopatra.
RUBY RED GRAPEFRUIT and all standard varieties on lemon and sour stock. Grand Island Nurseries, Eustis, Florida.

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